

West Nile Virus (WNV) Response Plan and Procedures for North Carolina

1. Purpose.

This plan outlines the actions and procedures that the State of North Carolina will take in response to the public health threat posed by West Nile virus (WNV). The lead agency for this response is the Department of Health and Human Services (DHHS). Other supporting agencies are the Department of Environment and Natural Resources (DENR), the Department of Agriculture and Consumer Services (NCDA&CS), and the Department of Crime Control and Public Safety (CC&PS).

2. Situation

- a. Background: West Nile Virus (WNV) occasionally infects humans, birds, and other animals in Africa, Eastern Europe, West Asia, and the Middle East. Until 1999 there had not been any documented cases in the United States. The method of introduction of the virus into the U.S. is not known, but this virus is most closely related genetically to strains found in domestic and wild birds in the Middle East.

Mosquitoes transmit WNV to humans. Mosquitoes can become infected when they feed on infected birds, which act as amplifying hosts for the virus. Once infected, mosquitoes can then transmit West Nile virus to humans and animals while feeding. The virus proliferates in the mosquito's salivary glands. During a blood feeding, the virus may be introduced with mosquito saliva into the animal or human, where it may multiply, causing illness. In most areas where mosquitoes carry the virus, less than 1% of mosquitoes are infected. Even if a mosquito is infected and transmits the virus to humans, less than 1% of those people who are infected by it become severely ill. So, the chances of becoming severely ill from any one mosquito bite are extremely small.

WNV is a threat to human health because it can cause encephalitis, which is an inflammation of the brain. In 1999, 62 cases of severe disease, including seven deaths, occurred in the New York City area. In 2000, 21 cases were reported, including two deaths in the Northeast. No reliable estimates are available for the number of cases of West Nile encephalitis worldwide. WNV infection in humans most often produces mild, flu-like symptoms, or no symptoms at all. Only a small number of people become very ill, and fewer still die from the disease, according to information from the U.S. Centers for Disease Control and Prevention (CDC).

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- b. Current Situation: Communities within the State of North Carolina are vulnerable to infection from the WNV. WNV has moved south from New York, where it was first identified in the U.S., to North Carolina in a little over a year. In the fall of 2000, a crow infected with WNV was found in Chatham County.

When WNV activity begins to intensify in birds and mosquitoes, human infection may occur. In addition to humans, other animals, especially horses, are vulnerable to infection from WNV.

It is important that multiple agencies at the state level work together to reduce the potential impact of WNV in North Carolina. Because of the public health implications of WNV, DHHS will serve as the lead agency in organizing technical resources. In addition to state agencies, response to WNV will involve local, federal and private agencies.

The greatest concerns involved with WNV are human illness and death. While the risk of acquiring WNV and actually exhibiting symptoms is low, the consequences of infection can be significant. About one of every four persons infected with WNV may develop a mild febrile illness. Of those persons who become infected, only about one in every 100-200 develops severe neurologic disease. These individuals are usually 55 years of age and older. Of those who develop WNV encephalitis, about 11% die of the disease. This prospect will cause concern among the general public.

3. Mission. The mission of the State is to:

- a. detect the presence of WNV and monitor its spread and severity;
- b. educate the general public and medical community regarding signs and symptoms of infection, personal protective measures, and mosquito control methods;
- c. communicate WNV activity within North Carolina; and,
- d. provide mosquito control assistance to affected areas in North Carolina.

4. Concept of Operations: This response plan is based on the most current revision of CDC's "Epidemic/Epizootic West Nile Virus in the United States: Revised Guidelines for Surveillance, Prevention, and Control." This plan follows a stepped response based on the level of detected WNV activity. This plan has been developed as a result of detected WNV activity in North Carolina, and has resulted in the coordination between the North Carolina DHHS, DENR, NCDA&CS, CC&PS, local health departments (LHDs), and mosquito control agencies.

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- a. Preparation Phase: During the off-season (winter) for every year that there is a threat of WNV in North Carolina, the State Health Director or designee will:
 - form or reactivate a WNV committee;
 - review and update the response plan as appropriate;
 - review criteria and protocols for entomologic surveys, dead bird collection, human epidemiology, hotline numbers for public information and to report dead birds, resources for mammalian (non-human) and human laboratory analysis for WNV, public education, communications plan; and,
 - establish a communications network with local health departments.

This response plan will be reviewed by counsel to ensure compliance with applicable state regulations. The WNV committee will convene periodically, as necessary, throughout the mosquito season to review the WNV status in North Carolina and to address any associated issues that may arise.

- b. Response Phase: This response plan focuses on preventing human illness and death. In this scenario, WNV would be confirmed in a county based on the identification of WNV in mosquito samples; in at least one infected crow or other susceptible bird per county; and/or mammalian infection. Response efforts will be based on the presence and extent of WNV activity. Single WNV isolates and/or infections in animals or humans will be addressed according to standard response procedures. More extensive WNV activity, to include more than one human case, will warrant more vigorous response efforts.

As case findings increase and local resources are exhausted, the public health threat posed by WNV may become more significant. To recognize such scenarios, the state has identified three formal levels of alertness, progressing from least urgent to most urgent. These levels are specifically outlined in the following chart.

Certain conditions may dictate increased response activity by the state in anticipation of progression to alertness status. When WNV is assumed to be present in North Carolina at minimal levels, based on evidence from the prior season, activity will include outreach to communities, generation of press releases, data collection and analysis, and mosquito control. When North Carolina begins to see animal cases and WNV is present in nearby states, the state will heighten activity, including increasing efforts to educate the public.

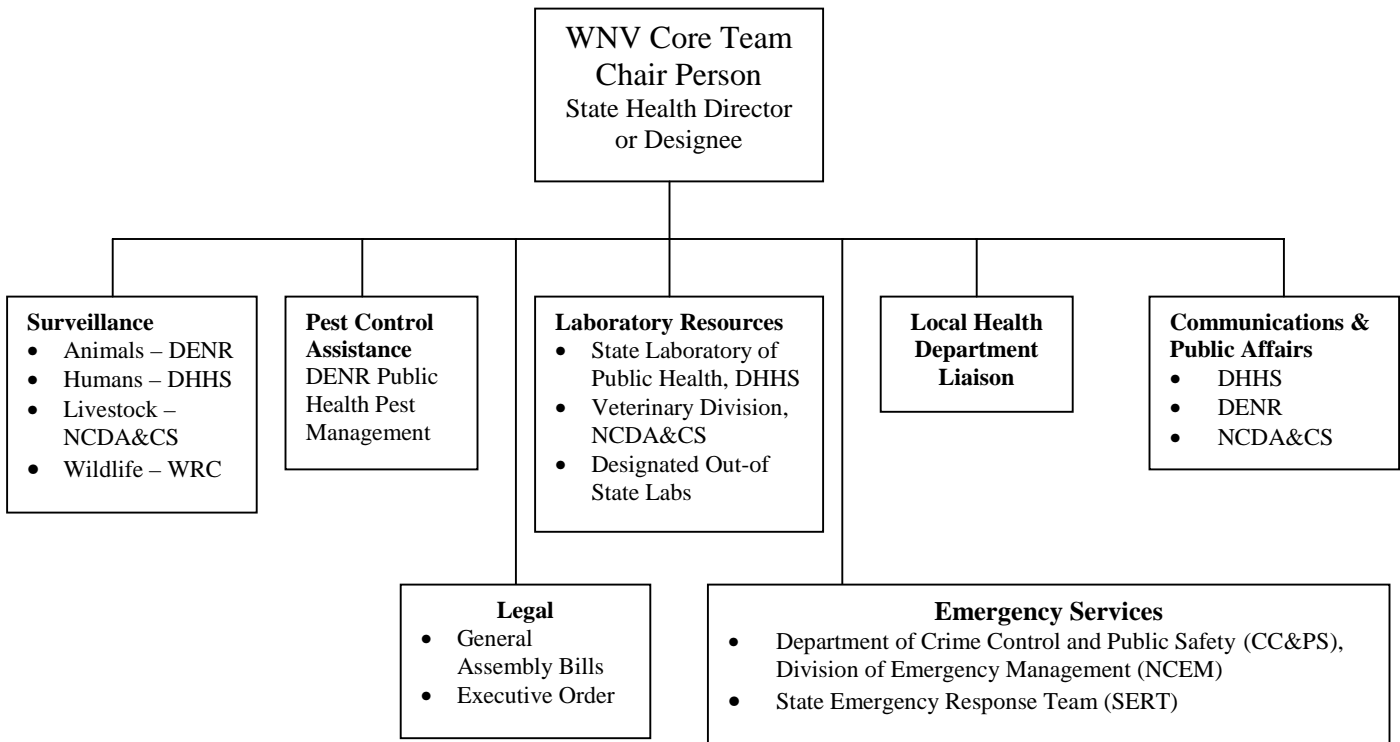
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Alert Level	Description	Action	Anticipated Time of Year
3	Numerous animal cases. Localized and intensive transmission of WNV in birds, mosquitoes, or non-human mammals. Situation may have exceeded some local governments' capacity/resources.	Departmental Secretaries inform Governor's Council of State about the situation. Recommend widespread larval control and ground ultra low volume (ULV) adulticiding by local programs in affected municipalities.	Summer and early fall
2	Sporadic human cases. Situation has exceeded local governments' capacity/resources.	Governor declares state of emergency. State assistance is provided to local governments.	Late summer/fall
1	Numerous human cases. Widespread or focal human clinical cases indicating an outbreak of West Nile encephalitis has exceeded the state's capacity/resources.	State manages mosquito control operations including aerial spraying. Governor requests federal assistance.	Late summer/fall

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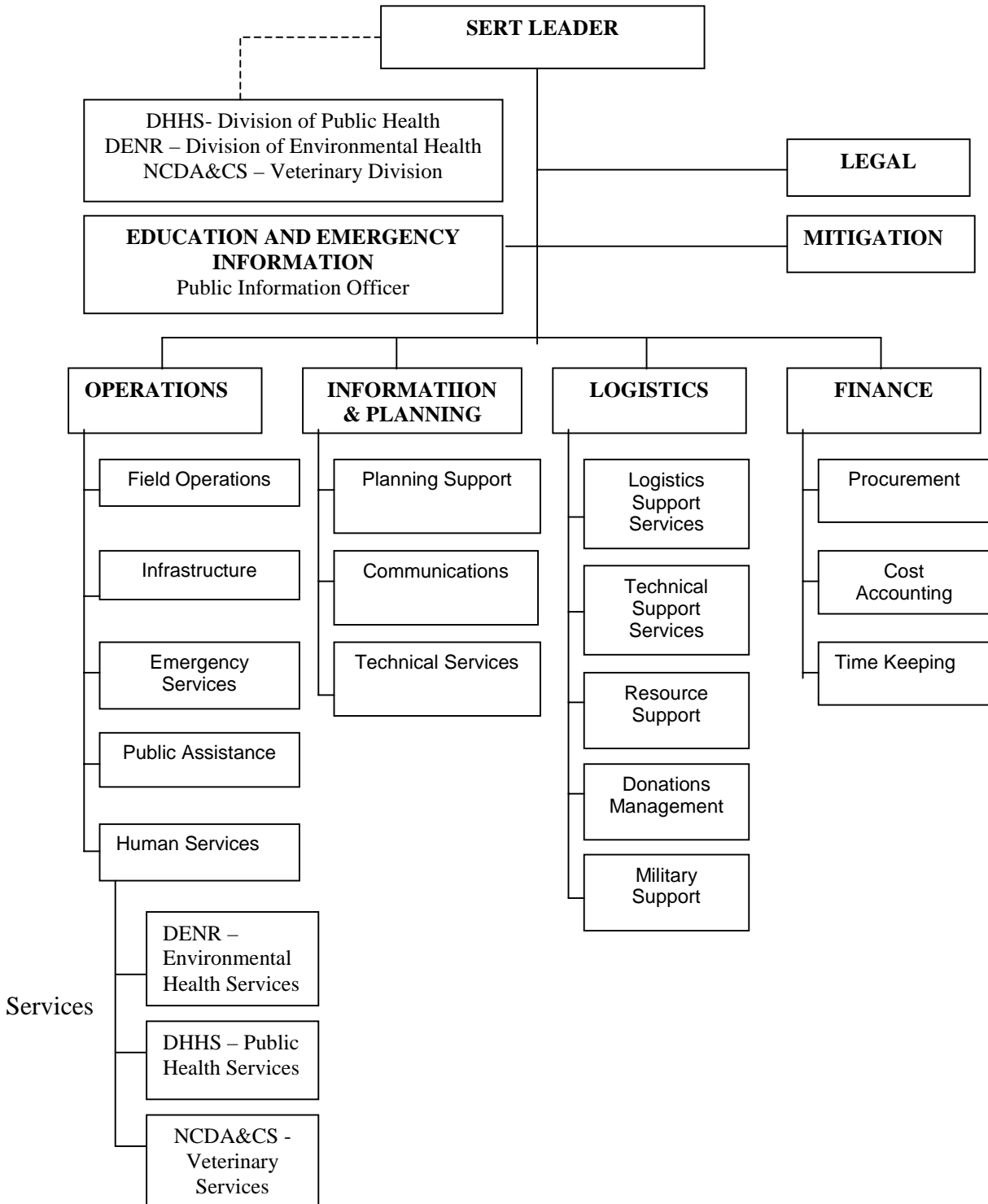
5. Organization. The State Health Director has formed a multi-disciplinary WNV Core Team to administer the response plan. This team is composed of representatives from state and local agencies in North Carolina. At a minimum, the composition of the committee will have representation from DENR Public Health Pest Management; NCDA&CS Animal Disease Diagnostic Laboratory System; State Laboratory of Public Health; Public Health Veterinarian; General Communicable Disease Control; DENR and DHHS Public Affairs; and a LHD liaison.

Organizational Structure for Preparation Phase and for Alert Level 3



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Response Phase: Organizational Chart for Alert Levels 2 and 1



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6. Responsibilities.

a. State Agencies.

All state agencies will work together to accomplish the mission of this response plan: detect, educate, communicate, and provide control as needed.

- i. The DHHS is responsible for public health protection in North Carolina. The State Health Director or designee will be responsible for organizing the State's response to WNV and for providing expertise associated with human exposure.
- ii. The DENR will support the role of the DHHS by providing expertise in mosquito control, entomologic surveys, and consultative services to county and local agencies.
- iii. The NCDA&CS will provide expertise in livestock and non-human mammalian exposures to the WNV.
- iv. The CC&PS will support the WNV Core Committee in the following areas:

The Department of Crime Control and Public Safety (CC&PS), Emergency Management Division, will provide assistance in the planning, drafting of bills for the General Assembly, drafting emergency declarations, and drafting press releases and public service announcements. Other CC&PS Divisions will provide law enforcement and general support when requested. This support will come from the State Highway Patrol, National Guard, and Civil Air Patrol. CC&PS can also activate the State Emergency Response Team (SERT), which can draw support from all state departments and agencies.

- b. County and Local Agencies: The local health departments will be responsible for developing mosquito control programs, providing public education to local residents, and participating in the state's dead bird collection system. This will include payment of shipping costs and, if needed, testing costs for dead birds. The county and district health departments will be responsible for communicating WNV information to municipalities within the county. Both the state and counties will continue to look for opportunities to acquire additional resources to help local governments respond as needed.
- c. Federal Support: The WNV Core Team will monitor federal aid opportunities as they become available.

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7. References.

1. Public Health and Related Laws of North Carolina, Chapter 130A, Article 1., 1993 Edition.
2. Epidemic/Epizootic West Nile Virus in the United States: Revised Guidelines for Surveillance, Prevention, and Control, Centers for Disease Control and Prevention. April, 2001.

8. Appendices

- Ecologic Surveillance - Pest Management, DENR, NCDA&CS, and WRC
 - Avian
 - Non-Human Mammals
 - Mosquitoes
- Surveillance of Human Cases - Epidemiology Section, DHHS
- Laboratory Diagnosis – NCDA&CS Animal Disease Diagnostic Laboratory System, other designated laboratories, and the DHHS State Laboratory of Public Health
- Control and Prevention - LHDs
- Communication - DHHS and DENR Public Affairs

9. Distribution

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10. Authentication.

This WNV Response Plan has been reviewed and approved by:

NC Department of Agriculture and Consumer Services

BY: Mei Scott Phipps
Commissioner or Designee
TITLE: Commissioner of Agriculture
DATE: September 5, 2001

NC Department of Environment and Natural Resources

BY: William G. Egan Jr.
Secretary or Designee
TITLE: _____
DATE: August 28, 2001

NC Department of Health and Human Services

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NC Department of Crime Control and Public Safety

BY: B. E. Beatty
Secretary or Designee
DATE: September 4, 2001